

Notice of Allowability

Application No.

10/600,507

Examiner

Blaise L. Mouttet

Applicant(s)

MERZ, ERIC A.

Art Unit

2853

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to January 5, 2005.
2. ☒ The allowed claim(s) is/are 1-3, 5, 7-11, 13-18, 21, 22.
3. ☒ The drawings filed on 23 June 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Stephen D. Meier
Primary Examiner

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Michael Britton on January 28, 2005.

Cancel claims 6 and 19.

Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Marler et al. US 5,506,608 is pertinent to fluid ejector assemblies and recognizes the importance of coefficient of thermal expansion (CTE) matching for fluid ejectors. Marler et al. also recognizes that the orientation of filler material in a polymer mold has an impact on CTE values (column 15, lines 25-33). However Marler et al. fails to employ the oriented filler material in a heat sink with a portion that is shaped to dissipate heat or that the orientation is parallel to a direction of heat flow from the fluid ejector module.

Whatley US 6,844,054 is pertinent to heat sinks in use with electronic components. The heat sink of Whatley employs fibrous material which may be in a polymer matrix and which is oriented in a direction of heat flow (column 2, lines 37-59).

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While the heat sink of Whatley has several similar characteristics to the claimed heat sink, the examiner has carefully considered the applicability of Whatley to the other cited prior art (particularly Murthy '912) and has determined that a combination resulting in applicant's claimed invention is not obvious based on a plurality of factors. These factors include the fact that while Whatley is concerned with generic problems of heat sinks used in cooling as applied to electronic devices there is no suggestion or motivation to apply these teaching to fluid ejectors. On the other hand applicant's have recognized specific advantages that such a heat sink would provide to fluid ejectors (i.e. the use of such a heat sink facilitates compatibility between thermal expansion coefficients of the heat sink and the materials out of which fluid ejectors or containers used with fluid ejectors are commonly made as discussed in paragraph [0040] of applicant's specification). In addition, a close examination of Murthy '912 reveals that the polymer construction of the carrier which includes the heat sink seems to be primarily suggested based upon a desired resistance to ink corrosion and not for any specific heat conduction benefit (column 3, lines 39-47 and column 5, lines 10-20 of Murthy). In fact Murthy cites metal materials or alloys as the preferred material for the carrier (column 4, lines 24-27 of Murthy). Whatley also cites metallic materials (aluminum, copper) as a possible matrix for the heat sink. While there may be some motivation to include oriented fibrous material in the preferred metallic heat sink of Murthy given Whatley, there is not seen to be a reasonable motivation for one of ordinary skill in the fluid ejection art to switch from the preferred **metallic** matrix of Murthy to a **polymeric** matrix material with the claimed oriented fibrous material.

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Applicant's claims are seen to provide a novel, non-obvious, and beneficial improvement to the art of fluid ejectors given the prior art of record.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet who may be reached at telephone number (571) 272-2150. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, Art Unit 2853, can be reached at (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet January 28, 2005

Blaise Mouttet 01/28/2005


Stephen D. Meier
Primary Examiner